

REMARKS/ARGUMENTS

Claims 1-9, 15, 17-19 and 22-24 are pending. By this Amendment, claim 1 is amended. Support for the amendments to claim 1 can be found, for example, in original claim 1. No new matter is added. In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

Allowable Subject Matter

Applicants thank the Examiner for the indication in the Office Action that claim 15 is allowed and that claim 17 contains allowable subject matter.

Rejection Under 35 U.S.C. §112, Second Paragraph

The Office Action rejects claims 1-9, 17-19 and 22-24 as indefinite under 35 U.S.C. §112, second paragraph. Applicants respectfully traverse the rejection.

By this Amendment, claim 1 is amended to obviate the rejection. The remaining claims are rejected solely for their dependency from claim 1. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejection Under 35 U.S.C. §103

The Office Action rejects claims 1-9, 18, 19 and 22-24 under 35 U.S.C. §103(a) over U.S. Patent No. 5,270,434 to Tetart et al. ("Tetart") in view of U.S. Patent No. 6,395,819 to Espiard et al. ("Espiard") and WO 01/23655 to Zeng et al. ("Zeng"). Applicants respectfully traverse the rejection.

Claim 1 recites "[a] product, comprising mineral fibers that have been coated with a sizing composition, wherein: the sizing composition comprises a liquid resin and a crosslinking agent; the liquid resin exhibits a dilutability in water at 20°C at least equal to

1,000%; the liquid resin comprises at least 70% by weight of condensates obtained by reacting a phenolic compound simultaneously with formaldehyde and an aminoalcohol according to the Mannich reaction; the mineral fibers comprise glass or rock . . ." (emphasis added). Tetart, Espiard and Zeng fail to disclose or suggest such a product.

The composition of claim 1 differs from the compositions of Tetart at least because the compositions of Tetart are not obtained by simultaneously reacting a phenol with formaldehyde and an aminoalcohol. This feature of claim 1 confers a different composition than is disclosed in Tetart and thus must be given patentable weight. *See MPEP §2114*. As discussed in the previous response:

- In step (1) of the Tetart process, the phenol and the formaldehyde are reacted until a phenol conversion rate of at least 93% is obtained and then step (2) is commenced.  
*See Tetart*, column 4, lines 29 to 33. At the conclusion of step (1), the reaction mixture is composed of phenol-formaldehyde condensates, excess phenol, and excess formaldehyde.
- In step (2) of the Tetart process, the amine is added as cooling begins or after the reaction mixture has been cooled to between 20 and 45 °C. *See Tetart*, column 4, lines 46 to 49. The amine reacts with the excess phenol and formaldehyde according to the Mannich reaction to provide phenol-formaldehyde-amine condensates. Accordingly, at the conclusion of step (2), the reaction mixture includes phenol-formaldehyde condensates (in a large quantity), phenol-formaldehyde-amine condensates (in a small quantity), excess phenol, and excess formaldehyde.
- In step (3) of the Tetart process, urea is added to the reaction mixture to form urea-formol condensates, thus even further reducing the amount of excess formaldehyde. *See Tetart*, column 4, lines 50 to 55. The liquid resin obtained at the conclusion of step (3), again, includes phenol-formaldehyde condensates (in a large quantity),

phenol-formaldehyde-amine condensates (in a small quantity), excess phenol, and excess formaldehyde.

As a result of these steps, the compositions of Tetart includes:

- (i) phenol-formaldehyde condensates corresponding to at least 93% of the initial phenol content;
- (ii) phenol-formaldehyde-amine condensates corresponding to at most 7% of the initial phenol content;
- (iii) urea-formaldehyde condensates;
- (iv) free phenol; and
- (v) free formaldehyde.

Claim 1, by contrast, includes phenol-formaldehyde-amine condensates in an amount of 70 weight percent based on a total weight of the liquid resin. A composition in which at least 93% of initial phenol is converted into phenol-formaldehyde condensates simply could not include 70 weight percent or more phenol-formaldehyde-amine condensates, as recited in claim 1. There simply is not sufficient free phenol remaining after the initial step to provide the amount of phenol-formaldehyde-amine condensates recited in claim 1. Applicants submit that experimental evidence is unnecessary to prove this point – Tetart provides ample disclosure supporting Applicants' position. *See, e.g., Tetart*, column 4, line 29 to 33 ("...the phenol and the formaldehyde ... are reacted, until a phenol conversion rate equal to or greater than 93% is obtained.").

Espiard and Zeng fail to remedy the deficiencies of Tetart. Espiard and Zeng are cited for their alleged disclosure of particular product configurations. *See* Office Action, page 3. However, Espiard and Zeng, like Tetart, fail to disclose or suggest a product including fibers coated with a sizing composition including a resin obtained by reacting a phenolic compound simultaneously with formaldehyde and an aminoalcohol.

As none of Tetart, Espiard and Zeng discloses or suggests a product including fibers coated with a sizing composition including a resin obtained by reacting a phenolic compound simultaneously with formaldehyde and an aminoalcohol, the combination of references fails to disclose or suggest each and every feature of claim 1.

As explained, claim 1 would not have been rendered obvious by Tenart, Espiard and Zeng. Claims 2-9, 18, 19 and 22-24 depend from claim 1 and, thus, also would not have been rendered obvious by Tenart, Espiard and Zeng. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

### Conclusion

For the foregoing reasons, Applicants submit that claims 1-9, 15, 17-19 and 22-24 are in condition for allowance. Prompt reconsideration and allowance are respectfully requested.

Respectfully submitted,

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